ABSTRACT

At least one implementation described herein relates to maintaining filters according to hierarchical data associated with the filters. The filters are maintained in a tree structure that is used to match inputs with filters. A filter hierarchy is an in-memory tree of string segments where each node corresponds to a string segment and references zero or more filters. When an input is received, a path associated with the input is parsed into string segments and the tree is traversed according to the string segments to locate nodes that match the input (primary matching). The input is then compared to filters referenced by matching nodes to locate filters that match the input (secondary matching). As a result, the input is tested against significantly fewer filters and greater efficiency is achieved over typical systems. Also, the primary matching process returns filters in a sorted order which facilitates the secondary matching process.